

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

North American Crane Workshop Proceedings

North American Crane Working Group

2005

TECHNIQUES EMPLOYED TO CAPTURE WHOOPING CRANES IN CENTRAL FLORIDA

MARTIN J. FOLK

Florida Fish and Wildlife Conservation Commission

STEPHEN A. NESBITT

Florida Fish and Wildlife Conservation Commission

STEPHEN T. SCHWIKERT

Florida Fish and Wildlife Conservation Commission

JAMES A. SCHMIDT


Florida Fish and Wildlife Conservation Commission

KATHLEEN A. SULLIVAN

Florida Fish and Wildlife Conservation Commission

See next page for additional authors

Follow this and additional works at: <https://digitalcommons.unl.edu/nacwgproc>

 Part of the [Behavior and Ethology Commons](#), [Biodiversity Commons](#), [Ornithology Commons](#), [Population Biology Commons](#), and the [Terrestrial and Aquatic Ecology Commons](#)

FOLK, MARTIN J.; NESBITT, STEPHEN A.; SCHWIKERT, STEPHEN T.; SCHMIDT, JAMES A.; SULLIVAN, KATHLEEN A.; MILLER, THOMAS J.; BAYNES, STEPHEN B.; and PARKER, JEANNETTE M., "TECHNIQUES EMPLOYED TO CAPTURE WHOOPING CRANES IN CENTRAL FLORIDA" (2005). *North American Crane Workshop Proceedings*. 17.
<https://digitalcommons.unl.edu/nacwgproc/17>

This Article is brought to you for free and open access by the North American Crane Working Group at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in North American Crane Workshop Proceedings by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Authors

MARTIN J. FOLK, STEPHEN A. NESBITT, STEPHEN T. SCHWIKERT, JAMES A. SCHMIDT,
KATHLEEN A. SULLIVAN, THOMAS J. MILLER, STEPHEN B. BAYNES, and JEANNETTE M.
PARKER

TECHNIQUES EMPLOYED TO CAPTURE WHOOPING CRANES IN CENTRAL FLORIDA

MARTIN J. FOLK, Florida Fish and Wildlife Conservation Commission, 1475 Regal Ct., Kissimmee, FL 34744, USA

STEPHEN A. NESBITT, Florida Fish and Wildlife Conservation Commission, 4005 South Main St., Gainesville, FL 32601, USA

STEPHEN T. SCHWIKERT, Florida Fish and Wildlife Conservation Commission, 4005 South Main St., Gainesville, FL 32601, USA

JAMES A. SCHMIDT¹, Florida Fish and Wildlife Conservation Commission, 4005 South Main St., Gainesville, FL 32601, USA

KATHLEEN A. SULLIVAN², Florida Fish and Wildlife Conservation Commission, 4005 South Main St., Gainesville, FL 32601, USA

THOMAS J. MILLER³, Florida Fish and Wildlife Conservation Commission, 4005 South Main St., Gainesville, FL 32601, USA

STEPHEN B. BAYNES, Florida Fish and Wildlife Conservation Commission, 2250 W. Martin St., Kissimmee, FL 34741, USA

JEANNETTE M. PARKER, Florida Fish and Wildlife Conservation Commission, 600 Ohio Ave., St. Cloud, FL 34769, USA

Abstract: During the course of re-introduction of a non-migratory flock of whooping cranes to Florida (1993-2002) a variety of techniques were used to capture 105 free-living birds. The most commonly used technique was hand-capture from a feed trough blind (45 birds). Whooping cranes were also captured by use of snares, several types of nets, and by hand. All techniques were relatively safe and posed little risk to the birds, a primary concern when dealing with rare birds. We found it useful to employ a diversity of techniques because some methods work better than others under differing circumstances. Capturing whooping cranes for replacement of radio transmitters is labor intensive and may represent the limiting factor in the successful long-term monitoring of the Florida population.

PROCEEDINGS NORTH AMERICAN CRANE WORKSHOP 9:141-144

Key Words: capture techniques, Florida, *Grus americana*, whooping crane

Long-term studies of long-lived birds require that the birds be captured routinely to replace transmitters and conduct health-checks. There also is a need to capture sick/debilitated individuals. Previously used methods for North American cranes include rocket nets (Ramakka 1979), alpha-chlorolose (Nesbitt 1984, Bishop 1991), night-lighting (Drewein and Clegg 1992), walk-in traps (Logan and Chandler 1987) and helicopter pursuit (Boise 1979, Ellis et al. 1998). Capture of free-living whooping cranes (*Grus americana*) has been limited to hand-capture of pre-fledged chicks (Kuyt 1978, Kuyt 1979, Drewien and Kuyt 1979) and night-lighting of birds on nocturnal roosts (Drewien and Clegg 1992). Very few post-fledged whooping cranes have been captured. Captures have been limited to 22 birds from the Rocky Mountain experimental flocks (K. Clegg, pers. comm.) and several other individuals.

We began reintroducing non-migratory whooping cranes to central Florida in early 1993 (Nesbitt et al. 1997). The primary method used to capture whooping cranes in Florida has been by hand-capture from a trough-blind (Folk et al. 1999), but we

have also employed other techniques. In this paper we summarize the techniques used to capture non-migratory whooping cranes in central Florida.

METHODS/STUDY AREA

We captured whooping cranes in widely differing habitats, circumstances, and locations within central Florida. We tested new methods for safety and efficacy on sandhill cranes prior to using them on whooping cranes. We usually conducted captures early in the morning when the birds were hungriest and the temperatures coolest. We often videotaped capture attempts to allow slow-motion playback. In this paper we do not deal with captures of penned (brailed) birds.

RESULTS

We employed 10 techniques during attempts to capture whooping cranes (Fig. 1). The most commonly used technique was by hand-capture from a feed-trough blind (45 birds). Whooping cranes and sandhill cranes, being opportunistic, routinely eat from the feed troughs of livestock in central Florida. A specially built trough was used to hide a biologist until the target bird was eating from a specific location on the trough. The technique involved having the hidden biologist grasp the target bird by the leg until the bird could be safely restrained

¹ Present address: 4857 N. 430th St., Menomonie, WI 54751, USA

² Present address: Happy Jack Ranger Station, HC 31 Box 68, Happy Jack, AZ 86024, USA

³ Present address: 207 Market St., P.O. Box 131, Vienna, MD 21869, USA

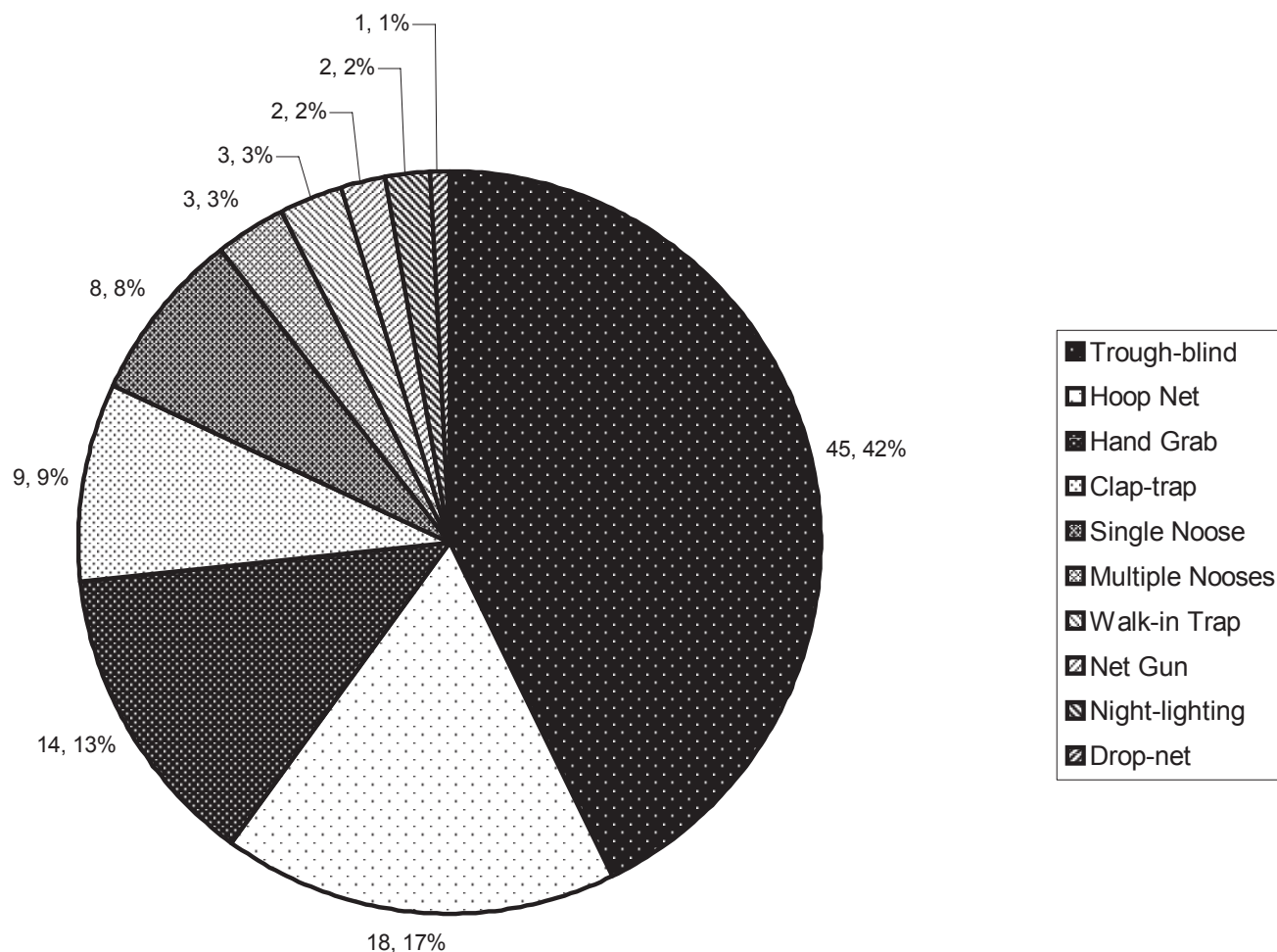


Fig. 1. Numbers of whooping cranes captured by various techniques in Florida 1993-2002. Of 105 captures, 18 were re-captures of some of the same birds.

(Folk et al. 1999).

Another technique (18 captures) involved using a long (2 m) handled hoop net (1 m in diameter). The net is used to pin the bird until we can effectively restrain the bird. This method requires that a biologist be within several meters of the target bird. Sometimes the biologist would wear a costume, such as those used for isolation rearing in captivity (Nagendran et al. 1996), to facilitate close approach to the target bird. We captured 14 birds by approaching close enough to grab them by the neck, wing, or leg. These birds were usually incapacitated by sickness or injury, or had learned panhandling skills from Florida sandhill cranes and would allow close approach by humans. For those "tame" individuals, a secondary benefit of the capture was negative conditioning with humans.

The clap-trap consisted of gill-netting (10 cm mesh size), rope, and 4 supporting sticks. The netting was staked to the ground and, when triggered, assumed the shape of a long puppet that closed over a bird or birds that had been baited to the middle of the trap. The trap was triggered by a biologist holding tension on 2 ropes from a nearby blind. The clap-trap and

multiple-snare techniques (described below) were presented by Hereford et al. (2001). The clap-trap was the only technique we used that allowed the simultaneous capture of more than one individual bird. In 2 attempts to capture 2 birds simultaneously, we were successful once; the other attempt resulted in the capture of a single bird. During an attempt to capture 3 birds, we caught 2 in the clap-trap.

Two techniques involved nooses or snares. We caught 8 birds by snaring one or both of their legs in a simple snare. We used a nylon cord (2-3 mm in diameter) with a loop (using a slip-knot) at one end. We baited the target bird into position so that one or both feet were within the loop. When possible, we hid the loop in loose sand. When the bird was in position, the biologist pulled the string to close the loop around the bird's leg(s). We laid the string on the ground for birds that would approach us within 3-5 m. We were able to extend the range up to 35 m by enclosing the string in 1/2-inch pvc conduit. The conduit protected the string from becoming entangled in vegetation or livestock.

A second method consisted of 100-200 snares (heavy

monofilament fishing line) tied to a long cord (Hereford et al. 2001). The row of snares, each anchored by its own small stake, could be placed in the predicted path of the target bird. As the bird stepped through a snare, it tightened around the bird's foot. The response of the bird was to flee the nooses, thereby keeping tension on the noose, holding the bird until biologists gained control of it.

For a short time we employed a small version of the drop-door walk-in trap that was used to successfully capture Mississippi sandhill cranes (Logan and Chandler 1987). During 2 of the 3 captures with this trap, we did not use the drop-door, but pinned the birds inside the trap with the use of a hoop net.

We captured 2 whooping cranes by means of a net-gun. We brought one of these into captivity for a broken leg (from an unidentified cause). The bird died of asphyxiation unexpectedly a number of days after repair of the leg. Apparently it had inhaled a kernel of corn that was used to bait the bird within range of the net-gun. It is possible that the noise of the net-gun caused the bird to aspirate the corn. It is not known if this was a "fluke" accident or if the net gun may pose the threat of this on a regular basis.

We captured 2 whooping cranes by night-lighting. These were birds that during the first year of the release program were roosting on dry ground. They were captured in uplands at night and returned to the safety of the soft-release pen. We did not routinely attempt night-lighting captures of whooping cranes because the roosting habitat used by Florida cranes did not present the same structure that contributed to successful night-lighting of birds in the western U.S. by Drewien and Clegg (1992). There also was a danger in flushing birds from their roost if they were unfamiliar with alternate roost sites.

We captured 1 whooping crane under a drop-net that was suspended from a tubular metal framework. That bird had monofilament line constricting one leg and would not approach a feed-trough blind.

We tried 2 techniques that proved unsuccessful for capture of whooping cranes. We made an unsuccessful attempt to chase a crane into a large (3 m high x 20 m long) mist net. Finally, we also made an unsuccessful attempt at approaching within hoop net range by using a Holstein cow costume. Two biologists in the costume entered a pasture to approach the cranes. As soon as we donned the costume, all cranes flushed from the area and the livestock stampeded so we gave up on the cow costume. We were not the first to attempt such an approach; Robert Porter Allen, when studying whooping cranes in Texas, built a blind in the shape of a bull and named it *Bovus absurdus* (McNulty 1966).

Immediately after capturing all cranes, we hooded, examined, and weighed them. We also collected blood and fecal samples. After replacing radio transmitters and color bands we released the captive birds back to their social group. Typically, we released birds that did not require medical attention within 0.5-0.75 h after capture.

Most of the successful capture tools were not particularly

expensive (\$100 or less), but the net gun was \$300. The greatest expense for each capture was the labor involved with baiting the birds to a vulnerable setting.

We captured 18 birds more than once. Fourteen birds were caught twice, 3 were caught 3 times, and 1 bird was caught 4 times. On 5 occasions we recaptured an individual using the same technique (feed trough blind) but most recaptures required the use of varying techniques. Birds became wise to a given technique and were difficult to bait to situations where they had been captured in the past.

DISCUSSION

The capture techniques we employed were safe, resulting in possibly one mortality (bird that aspirated corn), and only very minor injuries (scratches). Because safety is paramount when dealing with extremely rare birds, we did not attempt to capture whooping cranes with techniques that presented risk to the birds (e.g., oral tranquilizer alpha-chloralose, rocket-propelled nets). The benefit of those techniques is the routine ability to catch multiple individuals.

We found it useful to employ a diversity of capture techniques because some work better than others in different settings. Some techniques, like the feed-trough blind, offer complete selectivity of which bird was captured. In contrast, the multiple-noose technique often was hampered with "by-catch" such as non-target whooping cranes, sandhill cranes, livestock, and small mammals.

Each capture attempt, regardless of the technique employed, presented its own set of challenges. Universally, the challenge is getting the wary birds accustomed to something new in their environment. Due to their varying "personalities", some whooping cranes were never in a position for capture while others were "trap-happy". Most fell somewhere in between. The greatest cost of these techniques is the time necessary for getting the cranes accustomed to a site and capture situation. It often took several weeks before a capture could be attempted. Even after several weeks of "baiting", a capture opportunity may not present itself.

Recapturing soft-released whooping cranes is perhaps the greatest challenge for this re-introduction project. The intensive labor required to recapture cranes represents the greatest limiting factor to the long-term monitoring of the population. Several bad batches of transmitters have resulted in premature radio failure and/or limited transmitting range. Routine breakage of the transmitting antennas (by the birds obsessively preening them) also often reduces the effective transmitting range of the antennas. Through the life of the project, the proportion of the population that carries fully functional radio transmitters has declined. At present, about 33% carry functioning transmitters. Our priority has been to keep at least 1 bird per pair or group with a functioning transmitter, which effectively allows the tracking of the entire group. Established pairs are given the highest priority for maintaining radio contact. This necessitates

a reduced sampling of the rest of the population and could only be rectified by adding project personnel.

In the future, in attempts to increase the proportion of the population with functioning transmitters, we anticipate increased use of the clap-trap. The clap-trap is the only technique we've found that allows the capture of multiple individuals.

Ideally what we need is a safe method of attaching a transmitter without capturing/handling and the usual lengthy process of baiting the birds and getting them used to a site and situation. This might be accomplished through the use of an air rifle that shoots a tiny (several gram) transmitter that is equipped with a rapid-drying adhesive that binds the radio to the feathers. The transmitter would ideally last the life of the feathers that it was adhering to. The challenge would be to have a transmitter streamlined enough to be shot from an air gun and be less likely to be simply preened from the plumage by the bird. To discourage the latter, the transmitter should be white and feather-shaped. In the future as technology progresses and components become more miniaturized, perhaps such a tool could be developed.

ACKNOWLEDGMENTS

We acknowledge the many private landowners that allowed access to their properties in central Florida. We thank T. E. Grazia of the Mississippi Sandhill Crane National Wildlife Refuge for teaching us several techniques.

LITERATURE CITED

- Bishop, M. A. 1991. Capturing cranes with alpha-chlorolose (an oral tranquilizer). Pages 247-253 in James Harris, editor. *Proceedings 1987 international crane workshop*. International Crane Foundation, Baraboo, Wisconsin, USA.
- Boise, C. M. 1979. Lesser sandhill crane banding program on the Yukon-Kuskokwim Delta, Alaska. Pages 229-236 in J.C. Lewis, editor. *Proceedings 1978 crane workshop*. Colorado State University Printing Service, Ft. Collins, Colorado, USA.
- Drewien, R. C., and E. Kuyt. 1979. Teamwork helps the whooping crane. *National Geographic* 155:680-693.
- _____, and K. R. Clegg. 1992. Capturing whooping cranes and sandhill cranes by night-lighting. *Proceedings North American crane workshop* 6:43-49.
- Ellis, D. H., D. Hjertaas, B.W. Johns, and R.P. Urbanek. 1998. Use of a helicopter to capture flighted cranes. *Wildlife Society Bulletin* 26:103-107.
- Folk, M. J., J. A. Schmidt, and S. A. Nesbitt. 1999. A trough-blind for capturing cranes. *Journal of Field Ornithology* 70:251-256.
- Hereford, S. G., T. E. Grazia, M. Nagendran, and A. Hussain. 2001. Use of traditional Indian trapping methods to capture sandhill cranes. *Proceedings North American Crane Workshop* 8:220 (abstract only).
- Kuyt, E. 1978. Whooping crane color-marking. *North American Bird Bander* 3:162.
- _____. 1979. Banding of juvenile whooping cranes on the breeding range in the Northwest Territories, Canada. *North American Bird Bander* 4:24-25.
- Logan, T. J., and G. Chandler. 1987. A walk-in trap for sandhill cranes. Pages 221-223 in J. C. Lewis, editor. *Proceedings 1985 crane workshop*. Platte River Whooping Crane Habitat Maintenance Trust, Grand Island, Nebraska, USA.
- McNulty, F. 1966. *The whooping crane*. E. P. Dutton & Co., New York, New York. 88-pages.
- Nagendran, M., R. P. Urbanek, and D. H. Ellis. 1996. Special techniques, part D: reintroduction techniques. Pages 231-240 in D. H. Ellis, G. F. Gee, and C. M. Mirande, editors. *Cranes: their biology, husbandry, and conservation*. U.S. Department of the Interior, Washington, D.C., and the International Crane Foundation, Baraboo, Wisconsin, USA.
- Nesbitt, S. A. 1984. Effects of an oral tranquilizer on survival of sandhill cranes. *Wildlife Society Bulletin* 12:387-388.
- _____, M. J. Folk, M. G. Spalding, J. A. Schmidt, S. T. Schwinkert, J. M. Nicolich, M. Wellington, J. C. Lewis, and T. H. Logan. 1997. An experimental release of whooping cranes in Florida – the first three years. *Proceedings North American Crane Workshop* 7:79-85.
- Ramakka, J. M. 1979. Capturing sandhill cranes in Texas and Nebraska. Pages 75-80 in J. C. Lewis, editor. *Proceedings 1978 crane workshop*. Colorado State University Printing Service, Ft. Collins, Colorado, USA.